Information security covers the protection of information against unauthorized disclosure, transfer, modification, and destruction, whether accidentally or intentionally. Quality of life in general and of individual citizens, and the effectiveness of the economy critically depends on our ability to build software in a transparent and efficient way. Furthermore, we must be able to enhance the software development process systematically in order to ensure software’s safety and security. This, in turn, requires very high software reliability, i.e., an extremely high confidence in the ability of the software to perform flawlessly. Foundations of software technology provide models that enable us to capture application domains and their requirements, but also to understand the structure and working of software systems and software architectures. Based on these foundations tools allow to prove and ensure the correctness of software’s functioning. New developments must pay due diligence to the importance of security-related aspects, and align current methods and techniques to information security, integrity, and system reliability. The articles in this book describe the state-of-the-art ideas on how to meet these challenges in software engineering.
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